

## DIVERSITY OF SOME PLANKTON TAXOCENOSES IN THE CENTRAL ADRIATIC

R e g n e r Dubravka and Slobodan R e g n e r

Institute of oceanography and fisheries, Split, Yugoslavia

*On a présenté les indices de la diversité pour les copépodes, les larves des poissons, et les diatomées dans l'Adriatique Centrale.*

*The diversity indices of diatoms, copepods and fish larvae have been studied in the Central Adriatic.*

As we have no possibility to consider the diversity of whole plankton community, in this paper data will be given on some parts of it. So, the diatoms, copepods, and larval stages of fishes were collected at three permanent stations, covering the coastal area, the channel region and the open sea of the Central Adriatic. Using the formula by Margalef, (1951), the global diversity indices were calculated from number of species (S) and specimens (N).

At the station "Kaštela Bay" (coastal area) 85 species of diatoms\*, 35 species of copepods, and 20 species of fish larvae were found. The highest global diversity index was found for copepods, less was for diatoms, and the smallest for fish larvae (Tab.1).

Table 1

	S	N	d
Diatoms	85	2,552.495	5.69
Copepods	35	225	6.28
Larval stages of fishes	20	793	2.84

The number of diatom and copepod species, as well as their diversity indices, were the highest during the winter, while the fish larvae and postlarvae had the highest number of species and diversity index from February to September (Fig. 1).

\* Data on diatoms of Kaštela Bay were taken from: H o m e n B, 1979.

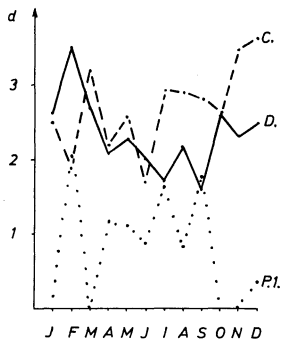


Fig. 1.

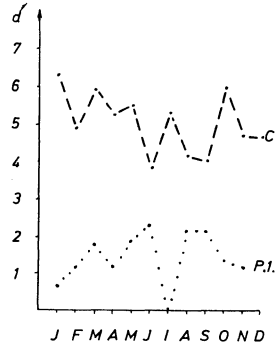


Fig. 2.

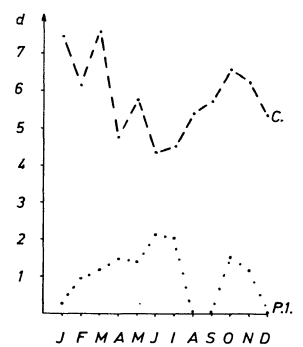


Fig. 3.

At the station "Pelegrin" (channel region), 58 species of copepods and 29 species of fish larvae have been found, i.e. much more than in the coastal area. Just as the number of species, the diversity indices were higher than in the coastal waters for both groups of organisms (Tab. 2).

Table 2

	S	N	d
Copepods	58	141	11.31
Larval stages of fishes	29	59	4.38

Seasonally, the number of copepod species and their diversity indices were the highest throughout the fall and winter. On the contrary, the number of fish larvae species and diversity indices were the highest from february till september, i.e. in the warmer period of the year (Fig. 2).

At the station "Stončica" (the open sea) 56 species of copepods and 27 species of fish larvae have been found. The diversity indices for both groups were higher than in the coastal waters and in the channel region (Tab. 3).

Table 3

	S	N	d
Copepods	56	102	11.69
Larval stages of fishes	27	226	4.80

The number of copepod species and their diversity indices were the highest during the winter, and those of fish larvae in summer (Fig. 3).

In general, the investigated part of plankton community in the Central Adriatic consisted of 85 diatom species, about 60 copepod species and 40 fish larval species, could be considered as rather heterogeneous. The highest number of copepod species and their diversity in winter can be related to the stronger incoming current in the same period of the year. The number of fish larvae species and their diversity were the highest during the warmer period and that might be the consequence of their atlantic-mediterranean and circum tropical origin.

Moreover, the diversity indices of both groups increased towards the open sea, which confirmed that the species diversity increased with the decreasing of amplitudes of ecological factors (R e g n e r, D., 1976), and with the primary production decreasing (M a r g a l e f, 1967).

It could be of interest to mention that the differences between maxima and minima of the diversity indices were the lowest at diatoms. They were somewhat higher at copepods, while at the highest trophic level (fish larvae) they were the highest.

#### R e f e r e n c e s

- M a r g a l e f, R., 1967. Some concepts relative to the organization of plankton. *Oceanogr. Mar. Biol. Ann. Rev.*, 5, 257-289.
- R e g n e r, D., 1976. On the copepods diversity in the Central Adriatic in 1971. *Rapp. Comm. int. Mer Médit.*, 23, 9, 95-96.
- H o m e n, B., 1979. Seasonal fluctuations of the phytoplankton biomass in the Central Adriatic coastal area. *Acta adriat.*, 19, 12, 47p.

